ASSIGNMENT 2

Textbook assiqnment 1: "Electrically Operated Canopy System," chapter 2, pages 2-1 through 2-13.

2-1. What function does the canopy serve on the F/A-l8C?

1. Protection from the elements
2. Entry and exit for the cockpit
3. Both 1 and 2 above
4. A means for total visibility

2-2. The F/A-l8C canopy is normally operated in which of the following modes?

1. Pneumatic
2. Hydraulic
3. Electrical
4. Manual

2-3. Under normal conditions, the canopy is controlled by which of the following devices?

1. Internal canopy control switch
2. External canopy control switch
3. Both 1 and 2 above
4. Manual canopy control handle

2-4. When the canopy actuation control system has failed, what method will be used to open and close the canopy?

1. Manual back-up mode
2. External electrical power
3. Internal electrical power
4. Utility battery power

2-5. Which of the following components is mounted on the canopy?

1. Canopy unlatch thruster
2. Canopy contactor
3. Canopy actuator
4. Canopy actuation link

2-6. The canopy actuator, used to open and close the canopy, is protected by a thermal device that senses an overheat condition.

1. True
2. False

2-7. What total number of manual methods are available to open and close the canopy?

1. One
2. Two
3. Three
4. Four

2-8. What total number of canopy control switches are provided for normal electrical operation of the canopy?

1. One
2. Two
3. Three
4. Four

2-9. What canopy contactor supplies power to the close windings of the canopy actuator motor?

1. Up
2. Down
3. Open
4. Close

2-10. In what canopy latch retainer is the canopy position switch mounted?

1. Number 1
2. Number 2
3. Number 3
4. Number 4

2-11. What switch(es) must be depressed to extinguish the master caution light?

1. Canopy position switch
2. Canopy locked switch
3. Both 1 and 2 above
4. Canopy caution switch

2-12. How much power does the F/A-18 aircraft electrical system supply for canopy operation?

1. 24 volts ac
2. 24 volts dc
3. 28 volts dc
4. 28 volts ac

2-13. The air-cycle air-conditioning system supplies cold air for the inflation of the canopy pressure seal.

1. True
2. False

2-14. Both canopy switch plungers must be depressed within what maximum number of seconds?

1. 5
2. 10
3. 15
4. 20

2-15. If you use the internal manual canopy handle, what maximum number of turns may be required to close the canopy?

1. 70±1
2. 75±1
3. 80±1
4. 85±1

2-16. What component transfers the mechanical motion of the manual drive unit to the canopy actuator?

1. Handle assembly
2. Actuator arm
3. Shaft assembly
4. Torque limiter

2-17. What maximum number of turns may be required to externally operate the canopy actuator manual drive unit?

1. 5±1
2. 15±1
3. 25±1
4. 35±1

2-18. What component prevents damage to the actuator if excessive force is applied in the manual back-up control mode?

1. Handle assembly
2. Actuator arm
3. Shaft assembly
4. Torque limiter

2-19. Which of the following handles will cause the canopy to be jettisoned?

1. Internal jettison
2. External jettison
3. Ejection control
4. Each of the above

2-20. What device(s) prevents the backflow of an SMDC detonation from reaching the seat components?

1. Emergency escape disconnect
2. One-way transfer valve
3. SMDC initiator
4. Both 2 and 3 above

2-21. What component provides the ballistic gas that fires the canopy jettison rocket motor?

1. Canopy jettison SMDC initiator
2. Emergency escape disconnect
3. Canopy unlatch thruster
4. Canopy jettison FCDC initiator

2-22. What component provides the vertical thrust needed to separate the canopy from the aircraft?

1. Canopy actuator
2. Rocket motor
3. Unlatch thruster
4. SMDC initiator

2-23. Which of the following devices is used to protect SMDCs?

1. Metallic sheath
2. Braid overwrap
3. Stainless steel tubing
4. Aluminum tubing

2-24. What is the approximate length of the external jettison initiator cable?

1. 6 feet
2. 8 feet
3. 10 feet
4. 12 feet

2-25. What device prevents the internal jettison handle from being squeezed and pulled?

1. Shear pin
2. Safety pin
3. Shear wire

2-26. The rocket motor initiators convert ballistic-gas pressure to what force?

1. Explosive canopy thrust
2. Explosive stimulus
3. Explosive energy
4. Mechanical energy

2-27. What total number of SMDC initiators are in the F-18C canopy jettison system?

1. One
2. Two
3. Three
4. Four

2-28. How many methods are available to jettison the canopy on the F-18C aircraft?

1. One
2. Two
3. Three
4. Four

2-29. On the F-18 aircraft, how much time must elapse+before the thermal protection device will reset after sensing an overheat condition?

1. 15 seconds
2. 39 seconds
3. 60 seconds
4. 90 seconds

IN ANSWERING QUESTIONS 2-30 THROUGH 2-35, REFER TO THE CANOPY JETTISON SYSTEM SCHEMATIC AT FIG. 2-12 IN THE TEXT. SELECT FROM COLUMN B THE CORRECT MEANING OF THE SYMBOLS IN COLUMN A.

	COLUMN A		COLUMN B
2-30.		1.	Shielded mild detonating cord
	1. 5 2. 6 3. 7 4. Both 6 and 7	2.	Flexible confined detonating cord
2-31.	------	3.	Ballistic gas
	1. 5 2. 2 3. 3 4. 4	4.	Structural pivot point
2-32.		5.	Mechanical linkage
	1. 1 2. 2 3. 3 4. 4	6.	Ejection seat
2-33.		7.	Emergency escape sequencing system
	1. 7 2. 6 3. 5 4. 4		
2-34.			
	1. 1 2. 2 3. 3 4. 4		

IN ANSWERING QUESTION 2-35, REFER TO THE CANOPY JETTISON SYSTEM SCHEMATIC AT FIG. 2-12 IN THE TEXT. SELECT FROM COLUMN B THE CORRECT MEANING OF THE SYMBOL IN COLUMN A.

	COLUMN A		COLUMN B
2-35.		1.	Shielded mild detonating cord
	1. 2 2. 3 3. 5 4. 4	2.	Flexible confined detonating cord
		3.	Ballistic gas
		4.	Structural pivot point
		5.	Mechanical linkage
		6.	Ejection seat
		7.	Emergency escape sequencing system

2-36. What component(s) act(s) as a solid link during normal canopy operation?

1. Canopy actuation connecting link
2. Canopy actuator
3. Both 1 and 2 above
4. Canopy unlatch thruster

2-37. What maintenance code is displayed on the nosewheel well DDI in the event the canopy switches disagree?

1. 888
2. 889
3. 890
4. 898

2-38. The electrical inputs supplied to the canopy actuator are transformed into what type energy?

1. Electrical
2. Direct power source
3. Mechanical motion
4. Logic circuit power

IN ANSWERING QUESTIONS 2-39 THROUGH 2-42, REFER TO FIGURE 2-9 IN THE TEXT.

2-39. The canopy system will be removed from the battery circuit when battery voltage drops below

1. 19 Vac
2. 19±1 Vac
3. 19 Vdc
4. 19±1 Vdc

2-40. When is the left main landing gear WOW relay #2 energized?

1. With weight on wheels
2. With external power applied
3. With weight off wheels
4. With battery power applied

2-41. From what circuit breaker/relay panel does the canopy control receive its power?

1. 6
2. 2
3. 8
4. 4

2-42. What component houses the thermal protection device?

1. Canopy control switch
2. Canopy actuator
3. #3 relay panel
4. #8 relay panel

IN ANSWERING QUESTIONS 2-43 THROUGH 2-49, REFER TO FIGURE 2A, BELOW, AND FIGURE 2-9 IN THE TEXT. MATCH THE COMPONENT NAME IN THE QUESTION WITH THE ALPHABETIC INDICATOR IN FIGURE 2A.

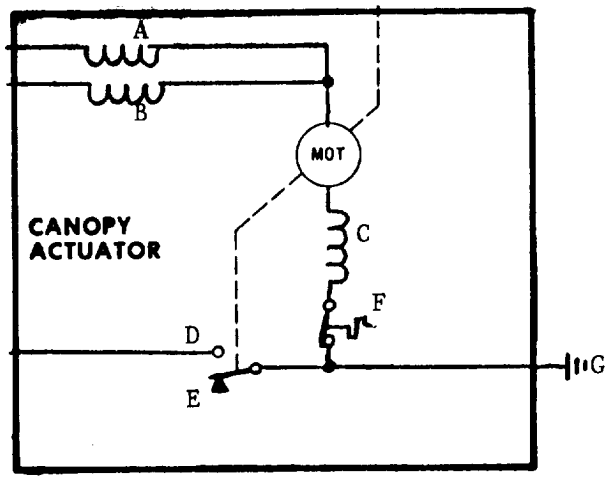

Figure 2A.--Canopy Actuator

2-43. Canopy up limit switch--up contact.

1. B
2. C
3. D
4. E

2-44. Canopy actuator electrical ground.

1. A
2. C
3. E
4. G

2-45. Canopy actuator field windings--open.

1. A
2. B
3. C
4. F

2-46. Canopy actuator brake winding.

1. D
2. C
3. B
4. A

2-47. Canopy actuator thermal protection device.

1. D
2. E
3. F
4. G

2-48. Canopy up-travel-limit switch--not up contact.

1. B
2. C
3. D
4. E

2-49. Canopy actuator field windings--close.

1. A
2. B
3. C
4. G

2-50. How many systems and components are related to the electrical canopy system?

1. Seven
2. Nine
3. Three
4. Four

2-51. Unlike the external canopy control switch, the internal canopy control switch has only two positions, open and close.

1. True
2. False

IN ANSWERING QUESTION 2-52, REFER TO FIGURE 12-9 IN THE TEXT.

2-52. Which of the following switches is/are a double pole double throw switch(es)?

1. Canopy position switch
2. Internal canopy control switch
3. External canopy control switch
4. Both 2 and 3 above

2-53. Explosive stimulus produced by the initiator is transferred through the SMDC to what component?

1. Canopy unlatch thruster
2. Emergency escape disconnect
3. Flexible confined detonating cord
4. Rocket motors

2-54. What component prevents explosive stimulus from continuing toward the ejection seat components during internal canopy jettison?

1. FCDC
2. Canopy unlatch thruster
3. Emergency escape disconnect
4. One way transfer valve

2-55. What action does each rocket motor produce to separate the canopy from the aircraft?

1. Thrust aft and up
2. Sufficient burn time
3. Vertical thrust
4. Horizontal thrust

2-56. During canopy jettison, the thruster unlocks internally and forces the canopy aft to disengage the canopy latches.

1. True
2. False

IN ANSWERING QUESTIONS 2-57 THROUGH 2-60, REFER TO FIGURE 2-9 IN THE TEXT. IDENTIFY THE TYPE SWITCHES USED IN THE ELECTRICAL CANOPY SYSTEM.

2-57. Canopy locked switch.

1. Single pole double throw momentary contacts
2. Single pole double throw
3. Double pole double throw momentary contacts
4. Double pole double throw

2-58. External canopy control switch.

1. Double pole double throw
2. Single pole three position
3. Double pole double throw momentary on
4. Single pole double throw three position

2-59. Canopy up contactor.

1. Single contact
2. Momentary on
3. Double contact
4. None of the above

2-60. Holding coil.

1. Single pole double throw normal or momentary contacts
2. Single pole double throw
3. Single pole single throw
4. Single pole single throw normal or momentary contacts on